



The Arboretum Bulletin



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Clematis

By GERTRUDE WILLS

Location: Partial shade. Shaded roots.

Time to Plant: Spring preferably.

Type of Soil: Rich, well-drained, loamy—lime.

Type of Fertilizer: Bone meal, manure, leaf mold.

Time to Fertilize: Fall or spring.

Time to Spray and Type of Spray Material: Spray lightly in spring with sulphur fungicide or Bordeaux.

Pruning: When and How: Those which flower from young basal roots, all growth cut back in spring. Those which flower on old wood, take off weak and superfluous shoots when dormant. Henri and Duchess of Edinburgh, very little.

Propagation: Seed, layers, division, cuttings under glass, grafting.

Uses: Trellis, fence, house. *C. recta* in perennial border.

Objection If Any: Some types, such as *C. paniculata*, occupy much space.

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Tuberous Begonias

By DOROTHY WILKINS

Location: Semi-shade.

Time to Plant: Seed January 15, inside April 1, outside in ground when warm.

Type of Soil: Slightly acid and light—1 part rotted horse manure fertilizer, 1 part sand, 2 parts leaf mold, plenty of water.

Type of Fertilizer: Rotted horse manure—cottonseed meal, not too close to stems.

Time to Fertilize: When first bud forms, then again about August 15.

Type of Spray Material: Sometimes wireworms attack tubers—use naphthalene.

Pruning: None.

Propagation: From seeds and cuttings in wet sand.

Uses: Bedding plants, window boxes, hanging baskets.

Objections, If Any: Too much work.

Remarks: Must have good drainage. Soil—1 part rotted fertilizer, 2 parts leaf mold, 1 part sand. Need plenty of water but don't water when sun is out. It burns the leaves. Seed should be started in sterilized soil of 1 part good soil, 2 parts leaf mold, 1 part sand sifted fine. After four leaves show on the plant it should be transplanted into flats in the same kind of soil but not sifted. About June 1 put into pots in open ground. Will bloom about 1st of August. About November, when leaves turn yellow, should be taken up to dry in a well-aired place to cure. When stems fall off and tuber is dry, brush off dirt and put in dry, dark room in flats well-ventilated. Bring out March 15 into sunlight and when they show life, start in flats.

Hellebores

By JESSIE ALEXANDER

Location: Moist, well-drained locations, partially shaded by summer-leaving trees. Not the shade of evergreen trees.

Time to Plant: Early April is best but they may be planted in the fall.

Type of Soil: Rich loam, enriched by old manure. Apply chalk or lime.

Type of fertilizer: Old barnyard manure.

Time to Fertilize: After blooming.

Propagation: In fall or spring, by division.

Uses: May be planted in shrubbery borders, in rockeries, or if wanted for cut flowers, in beds.

Objections, If Any: Occupies too much space, running roots, etc.

Remarks: There are about 8 species of Hellebores. The species of *Helleborus niger* contains the most beautiful flowering varieties. Their waxy, white blooms, sometimes tinged with pink, vary in size from 2-5 inches in diameter. *H. orientalis* will flourish in almost any location, even under trees, where they bloom profusely and in a great variety of colors. *H. corsicus* is very striking. It sends out stout growths 2-3 feet in height and width, with thick glaucous leaves, green above and silver beneath. From the ends of these growths come great loose clusters of pea green flowers.

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A Brief History of Gardening

Japanese Gardens

(Continued from November)

AT THE best vantage point in a garden, one is most likely to find a summer house, for the Japanese are very fond of views. These vary in size from the most simple arrangement to a very elaborate miniature house, with floors and doors and windows. The simplest consists of a single post carrying a broad roof which may be of any shape or size.

Water in some form is essential in the garden. Whether a lake, a river, torrent or cascade makes little difference as long as it is present, in the design of the composition if not in truth. The streams are not deep rivers, for a shallow but clear running stream has a much better and cooler effect. The direction of the flow of the stream is a matter of importance, so the inlet is always placed at the east side of the garden and the outlet at the west side while the general direction of the flow is southerly. A waterfall is often introduced to indicate the source of lake or stream and near the cascade a pine tree is placed so that the branches will hide the pipe which brings the water to the garden. If it is possible to have a lake, there is usually found at least one island. These are generally connected to the mainland by one or more bridges, depending on the

size of the lake. The drainage of the grounds is never allowed to mix with the water in the streams, for their chief beauty lies in the clearness of the water.

The vegetation is considered after the contours of the garden have been decided and the principal rocks have been placed. Formality in the arrangement of the plants is carefully avoided. Contrasts of form and line receive first attention and then the contrasts of color in the foliage of the shrubs and bushes are considered. Such plants as the twisted pine, the spreading cherry and the drooping willow are purposely combined. Deciduous trees are not given a prominent place in the foreground planting for they have a bare aspect in winter. The evergreens are clipped and sheared but the forms are not incongruous with nature. The Japanese have a fondness for low shrubs which have been clipped into hemispherical shapes, so that there are rounded masses of varying shades of green throughout the garden. The different kinds of junipers, box, azalea and dwarf thuja are used in this way. Among the evergreens used are pines, firs, spruces, thuja, junipers, tsuga, yew, holly and evergreen oaks. The deciduous plants include sycamores, maples, chestnuts, elms, beeches, birches, willows, poplars, mulberry trees, ficus, Rhus, vaccinium, quercus, *evonymus alata*, cornus, *crataegus*, *viburnum*, *ligustrum*, tamarix and *cladastri*. Flowering trees and shrubs used are plum, cherry, peach, quince, pear, pomegranate, magnolia, camellia, wisteria, tree peonies, daphne, hydrangea. The principal flowering plants are chrysanthemum, aster, carnation, lily, gentian, iris, jonquil, lotus, peony, anemone, orchid. Vitis, clematis, *tecoma*, *ipomea*, *convolvulus* and *vicia* are used as the creeping plants.

There are many types of gardens in which the above plants and architectural features are combined, but in different ways. Perhaps the style most favored is the "Tama-gawa Tea Garden." One of this type always contains a narrow winding stream of clear running water, which is crossed in various places by stepping stones or simple plank bridges. Around the level areas the hills and banks are located and there are such other features as water basins and lanterns grouped about. The "passage garden" is another type commonly used, for the purpose of it is to command a distant view which may be seen from the terrace in front of the tea house.

English Gardens

The history of the formal garden in England is one of continuous and gradual growth, from the earliest medieval period to the close of the 17th century. With the beginning of the Tudor age, great changes came over English domestic architecture, and the period was characterized by a remarkable activity in house building. The dissolution of the monasteries exercised the greatest influence, for during the years 1536-39 nearly one-third of the land in the country changed hands, large fortunes were quickly made and a new class of land owners was created.

Toward the end of the 15th century the old fortified castles were being succeeded by comfortable brick houses. The gardens were no longer of necessity confined within the embattled castle walls. The houses were not built on the hill tops, but usually on lower-lying ground and were surrounded by a moat. Prolonged peace, however, diminished the necessity of keeping all lands within the protecting lines of the moat, and soon the gardens lay beyond it. With this additional space there was more scope for the play of fancy, and before long several changes in design came in.

One of the first innovations was the railed-bed in which flower beds were enclosed by low fences of trellis-work. This came into fashion just before the Tudor times and remained

in fashion for a number of years. Another innovation was topiary work which soon became a conspicuous feature in all gardens. The mount also was a feature developed at this time. In Tudor times the mount became a much more important feature than formerly. It was usually made of earth covered with fruit or other trees. Mounts were generally thrown up in divers corners of the orchards and were ascended by stairs of precious workmanship, or a spiral path planted on either side with shrubs, cut in quaint shapes, or with sweet-smelling herbs or flowers. The top of the mount was often surmounted by an arbor, either of trellis work and creepers, or a substantial building. Galleries made of poles and trellis work were a marked feature of the garden in the late 15th and 16th centuries. Other resting places were arranged along the walls in the form of shady nooks and corners with grass banks to serve as seats.

At the beginning of the 16th century a new flower bed was adopted as well as the straight railed beds. They were laid out in curious and complicated geometric patterns, and were known as "the knots". The earth in the knot was either raised a little, being kept in place by borders of bricks and tiles, or, as was more often the case, it was on the same level with the paths, and then divisions were made with box, thrift, etc. The beds were generally planted with ornamental flowers or small shrubs, or were sometimes filled with various colored earths.

The flowers used in the knots included among others: acanthus, asphodel, auricula, amaranth, bachelor's-button, corn-flowers, cowslips, daffodils, daisies, gilliflowers, hollyhock, iris, jasmine, lavender, lilies, lily-of-the-valley, marigold, narcissus, pansies, peony, periwinkle, primrose, roses, sweet-william, wall-flowers, and violets.

The Elizabethan era was a golden age in the history of domestic architecture, and also in that of garden design. The art was not confined to the larger houses for even the smaller manor-houses had their parterres, forecourts and bowling greens. The Elizabethan garden is a combination of what was best in the older English gardens and the new ideas which came from Italy, France and Holland.

The plan of a large place at this time usually comprised a walled-in forecourt in front of the house, and in the forecourt would be an entrance gate opposite the main entrance of the building, the wings of which gave the leading lines to the design. There was usually in the forecourt a small lawn, a fountain or a pond. On one side of the forecourt lay the base or bass court, surrounded by the kitchens, stables and other buildings which it was intended to serve, while on the other side were the more ornamental pleasure grounds and parterres, with probably one small enclosed garden known as "my lady's" garden, a survival from the middle ages.

Overlooking the garden and generally next to the house would be the terrace, usually some twenty to thirty feet wide and of considerable length, with perhaps an arbor at either end. The terrace would be protected by a balustrade and from it flights of steps would lead to the parterre, which was generally square in shape. The design of these gardens usually fell within the province of the architect builder of the house, and this custom continued until about the middle of the 18th century, when the landscape gardener established a new profession.

During the reign of Charles I, there was no great progress in the art of gardening. Le Notre was proving himself the greatest of all formal landscape gardeners on the continent, and John Rose became one of his pupils. In later years Rose was the gardener for Charles II, and in this work we can see the influence of the great Frenchman. Due to this influence the English gardens tended to increase in size, and some gardens were even laid out in the French manner.

With the succession of William and Mary there were further changes in the fashions of gardens, and the Dutch manner was followed for a time. With this style there came an exaggeration in the clipping of trees.

Then in the 18th century came a few men who discarded topiary work almost entirely and started a new style. Foremost among the leaders was William Kent, who was inspired to produce results that should resemble the compositions of the classical landscape painters. Sir Humphry Repton was another famous man of this school.

During the 19th century there was a revival of the Italian architecture and the more formal style came back. Sir Charley Barry was one of the foremost designers of this style. A revival of the formal garden has taken place within the last few years, the architect is working with the designer of the grounds so that a more pleasing and harmonious effect is attained.

American Colonial Gardens

The first city to be built in the new world was St. Augustine, in Florida, in 1555, by the Spaniards. The city holds much of delight and interest, but it is the interest of the strange and foreign rather than homely familiarity.

The English under Sir Walter Raleigh landed in Virginia in 1584, and found there woods "not barren and fruitless, but the highest and reddest cedars of the world, far bettering the cedars of the Azores, of the Indies, of Libanus; pines, cypresses, sassafras, the lentisk tree that beareth the mastick, and many other of excellent smell and quality."

The Dutch settled on Manhattan Island in 1614 and found "sweet smells, filling their nostrils"—and the first thing which they brought off to their ship was as much of the delicious spicy boughs as their boat would hold. Wherever men came to set foot on the shores of the new world, it is notable that fragrance met them; and over all the beauties and wonders to which the earliest writers bear witness, each in his own way, sweet odors drift of flowers and fragrant gums and spices."

In New England, Captain John Smith made a garden and of it he says, "Yet I made a garden upon the top of a Rockie Ile in May, that grew so well, as it served us for sallets in June and July."

It is of course obvious that gardens as we conceive and know them, could not exist until inroads had been made upon the wilderness, nor could little thought be given to the cultivation of any plant that had no definite economic value. The character of the people in the various sections exercised a decided influence on the character of the gardens which ultimately developed in the various locales. The Dutch had superior knowledge of garden craft, but they were lacking in taste, so that their gardens were no finer than the English gardens which were to the north and south of them.

What gardening there was came as the result of the efforts of the Jesuit fathers, rather than from any domestic inclination on the part of the citizens themselves. There is no hint of a garden on the Spanish outlook on Anastasia until Sir Francis Drake's visit to it in 1583, when he "burned their buildings and destroyed their gardens." St. Augustine was 65 years in growing to a town of 300 householders, but there is nothing about gardens until nearly the end of the 17th century, when Jonathan Dickinson wrote in 1696, "they having large orchards in which are plenty of Oranges, Lemmons, Limes, Figs and Peaches."

When we do find old garden plans, they bear unmistakable witness to a taste at once formal and ceremonious. And they hark back to the garden as it was then understood over the seas. This explains the careful exclusion of any sugges-

tion of nature in the old designs; the love of artificial forms; the stiff lines; the unyielding repression; the straight clipped walls of sternly disciplined growth.

There was a garden which showed some real design at the Governor's House in St. Augustine, stocked with some rare ornamental trees, plants and flowers, but it was destroyed in 1763. In the description which Stork wrote of the town at the time it was ceded to England, he says: "In the middle of the town is a spacious square called the Parade, open toward the harbour; at the bottom of this square is the governor's house, the apartments of which are spacious and suitable to the climate, with high windows, a balcony in front and galleries on both sides; to the back part of the house is joined a tower, called in America a look-out, from which there is an extensive prospect toward the sea as well as inland." There was a double row of trees on either side of the parterres, and a single row extending along either side of the boundaries of the ground. Boxwood and myrtle were used in the design of the parterre immediately adjoining the governor's house. Of flowers there was little else than roses used, but there was heliotrope, carnations, violets, lavender and iris also.

The houses in the town showed the same taste for regularity, and for the privacy of the grounds. The houses stood with one wall on the street, the way to the garden lying through the house or by means of an arcade beneath the second story of the house, and the seclusion of the garden was complete. Pavements of shells kept the garden walks and courtyards always neat and clean, and kept the suggestion of livableness out-of-doors.

It was not until 1619, during the administration of Yeardley, that there was private and actual ownership of the land in general. When Gov. Berkeley came to the colony he had instructions that every colonist holding 100 acres of land should establish a garden and orchards, carefully protected by a fence, ditch or hedge. The fence most commonly used was the rail fence, so characteristic of many parts of Virginia today. It was well past the middle of the 17th century before there was any evidence of a general concern for the finer and nicer things of the garden. Up to this time the plantation yard was just a partly shaded, irregular open field whereon the dwelling stood. The garden was near the house and was fenced or railed to keep out the hogs and cattle which grazed in meadows about the house.

(Continued next month)

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Plant Collections at the Arboretum

DURING the year there was a material increase in the sponsorship of several important plant groups by various organizations. In some instances the increase was of such an extent that we now have several collections containing more species and varieties than can be found anywhere else in the country in single plantings. Of particular import are the following:

Chaenomeles (Japanese quince) in 57 varieties; Camellias, 174; Ceanothus (Wild Lilac), 15; Viburnum, 39; Magnolias, 34; Maples, 165; Sumacs, 20, and Heathers, 120.

Also during the past twelve months the Arboretum has received some 2,250 separate acquisition items (seeds or plants). The list of countries from which many of these came makes interesting reading, especially in view of the world situation. Among those represented are Alaska, Australia, Canada, Chile, Costa Rica, England, Germany, Holland, Japan, New Zealand, Russia, Sweden and Tasmania.

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